**IN THE SPECIFICATION:**

Please amend paragraph **[0007]** as indicated below:

**[0007]** In one embodiment, there may be a guide catheter with a bend at its distal end such that its distal orifice is located at an angle with respect to the longitudinal axis of the catheter, through which a medical instrument, such as a percutaneous myocardial revascularization laser may be operated. This catheter is equipped with strain ~~gages~~ gauges along its wall, which measure localized stresses in the wall as the tube bends along a curved path. The stress indications provided by the strain ~~gages~~ gauges provide an indication of the bending of the catheter, for example, indicating which portion of the catheter is at the inside of the curve, and which portion is at the outside of the curve. If the strain ~~gages~~ gauges are located at a portion of the catheter which is bent as it passes through an anatomic reference geometry or region with a known configuration (an "anatomical reference"), such as through the aortic arch as the catheter passes though the aorta on the way to the left ventricle, the orientation of the distal catheter orifice may be simply and reliably determined. This information, combined with information obtained from fluoroscopic imaging from a single direction and knowledge of the orientation of the anatomical reference relative to the target site, permits a physician to efficiently and reliably determine whether the medical device is properly positioned and oriented with respect to the target site.

Please amend paragraph **[0008]** as indicated below:

**[0008]** Specifically, when the catheter passes through the anatomical reference plane and a bend in the catheter is formed, the strain ~~gages~~ gauges provide information on the direction in which the reference portion of the catheter is bent. Thus, this provides an indication of the relative rotation of the catheter with respect to the known anatomical reference. Because the orientation of a feature of the catheter such as a distal orifice relative to the strain ~~gages~~ gauges is also known, this information in turn provides an indication of the orientation of the distal orifice relative to the anatomical reference. When the information on the location and orientation of the distal end of the catheter obtained from the fluoroscopic imaging is combined with information on the orientation of the distal orifice relative to the reference, an unambiguous determination of the position and orientation of the distal orifice may be obtained. Any desired position and/or orientation corrections may then be made to ensure the medical device is properly oriented with respect to the target site, and the procedure then commenced.

Please amend paragraph **[0009]** as indicated below:

**[0009]** The foregoing method and system is amenable to a number of variations. For example, the strain ~~gages~~ gauges may be located within the wall of the catheter, or may be placed on a catheter wall surface, including either the inner or the outer surfaces of the catheter. Other wall bending indicators may also be employed, such as longitudinal rods contained within the catheter wall and emerging at the proximal end of the catheter wall, wherein as the catheter is curved as it passes through the anatomical reference, the rod(s) at the inside radius of the bend protrude farther from the proximal end of the catheter than the rod(s) at the outside radius of the bend. The distal end of the catheter may also comprise a variety of configurations, including, in addition to the foregoing transverse orifice, an angled distal tip whose longitudinal axis is displaced from the longitudinal axis of the catheter.

Please amend paragraph **[0024]** as indicated below:

**[0024]** Catheter 1 is equipped with wall bending indicators within catheter wall 7 in the reference portion of the catheter, i.e., the portion of the catheter that is located within aortic arch 11 when catheter distal end 4 is in the vicinity of the target site. These bending indicators provide an indication of the amount of localized bending, *i.e.*, localized compressive or tensile stress, in the portion of tube wall immediately adjacent to each stress indicator. As shown in Fig. 5 and 6, in this embodiment catheter 1 contains eight bending indicators 13 that may be evenly spaced about the circumference of the catheter within catheter wall 7, in a known relationship. In the present embodiment, bending indicators 13 may be strain ~~gages~~ gauges of a conventional type arranged in catheter wall 7 parallel to the longitudinal axis of catheter 1. The strain ~~gages~~ gauges may provide an indication of the magnitude of the tensile or compressive stress in the portion of catheter wall 7 adjacent to each ~~gage~~ gauge by changing their internal resistance as the portion of the tube wall monitored by each ~~gage~~ gauge is elongated or shortened (corresponding to the application of tensile or compressive stresses, respectively, on catheter wall 7 as the tube wall bends where it passes through the anatomical reference).

Please amend paragraph **[0025]** as indicated below:

**[0025]** The eight strain ~~gages~~ gauges located within catheter wall 7 are connected via signal wires 14 which run through catheter wall 7 to catheter proximal end 5, and may be connected to resistance monitoring equipment (not illustrated) which provides the physician a convenient display identifying, for example, the strain ~~gages~~ gauges with the highest and lowest

stress levels (corresponding to the outer and inner radii of the curve), or the orientation of the distal end of the catheter. The strain ~~gages~~ gauges may be located on the inner or outer surface of catheter wall 7 instead of imbedded within the wall, and signal wires 14 may be permitted to remain outside the inner or outer wall surfaces.

Please amend paragraph **[0027]** as indicated below:

**[0027]** The indication of which portions of the catheter are located at the outer and inner radii of the aortic arch permits the determination of the orientation of distal orifice 3 relative to the aortic arch. The location of each strain ~~gage~~ gauge about the circumference of catheter 1 is known, and the orientation of the distal orifice of the catheter relative to the locations of the strain ~~gages~~ gauges is known. From the strain ~~gage~~ gauge indications of catheter wall stress (observable, for example, on a display on monitoring equipment receiving the signals from the strain ~~gages~~ gauges via signal wires 14), it may be determined which of the strain ~~gages~~ gauges is located closest to outer radius 15 (*i.e.*, the strain ~~gage~~ gauge indicating the greatest tensile stress) and which strain ~~gage~~ gauge is located closest to inner radius 16 (*i.e.*, the strain ~~gage~~ gauge indicating the greatest compressing stress or, in the absence of any ~~gage~~ gauge indicating compressive stress, the lowest tensile stress). Then, because the orientation of the strain ~~gages~~ gauges is known, and the orientation of distal orifice 3 relative to the strain ~~gages~~ gauges is also known, the orientation of distal orifice 3 relative to the anatomical reference (through which the guide tube curves) may be ascertained. For example, in the present embodiment, the strain ~~gage~~ gauge wall stress indications will reveal the direction in which distal orifice 3 is pointing relative to the aortic arch (*e.g.*, 30 degrees posterior to the plane of the arch, 135 degrees anterior to the plane, or within the plane of the arch).